



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18TH STREET - SUITE 500
DENVER, CO 80202-2466

MAR 9 1999

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Deanna Bell
Operations Coordinator
Petroglyph Operating Company, Inc.
4116 W. 3000 S
P. O. Box 607
Roosevelt, UT 84066

RE: **UIC PERMIT MODIFICATION**
Conversion of Additional Well to
Antelope Creek Waterflood
EPA Area Permit UT2736-00000
Duchesne County, Utah

Dear Ms. Bell:

Your request of September 24, 1998, requesting that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood, as authorized under EPA Area Permit #UT2736-00000 is hereby granted.

<u>NAME</u>	<u>LOCATION</u>	<u>EPA WELL PERMIT NO.</u>
Ute Tribal #19-07	SW NE Section 19 T 5 S - R 3 W Duchesne County, UT	#UT2736-04491

This additional well is within the boundary of the existing area permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made by permit modification according to the terms and conditions of that permit. Unless specifically mentioned in this Permit Modification, conversion is being made under the provisions of 40 CFR Part 144.33 and the terms and conditions of the original permit. The proposed well location, well schematic, conversion procedures with/schematic, plugging and abandonment plan with/schematic, Cement Bond Log (CBL), and Financial Responsibility Demonstration, submitted by your office, have been reviewed and approved as follows:

- (1) The **conversion** plan for this production well has been reviewed, and found satisfactory. No corrective action is required.



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RE: UIC
Conv
Ante
EPA
Duch

*Scan under
UT20736-00000
modification - minor
mod approved 3/9/1999-1
Will need to link with
UT20736-04491 under
81 add well to Area Permit
in new database also.*

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- (2) **Maximum injection pressure (Pmax)** - the permittee shall limit the maximum surface injection pressure (Pmax) to 1985 psig. Permit provisions have been made that allows the operator to request an increase or decrease in the injection pressure.

The calculations for the fracture gradient was estimated from instantaneous shut-in pressures (ISIP's) observed during fracturing treatments performed on individually fractured zones within the four (4) initial wells establishing the Antelope Creek Field Area Permit. Based on this information, and within the Statement of Basis of the original Area Permit, an initial maximum injection pressure, using 0.88 psi/ft fracture gradient (Fg) has been established for this area permit and wells. This Fg is acceptable to the Environmental Protection Agency (EPA) and a theoretical maximum allowable surface injection pressure (Pmax), for this well, may be calculated as shown below:

$$P_{max} = [Fg - 0.433 (Sg)] d$$

Where: Pmax = Maximum surface injection pressure at wellhead

d = 4440' shallowest perforations after conversion

Sg = Specific gravity of injected water

$$P_{max} = [0.88 - .433 (1.00)] 4440$$

$$P_{max} = 1985 \text{ psig}$$

Until such time as the permittee demonstrates that a fracture gradient other than 0.88 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure (Pmax) for this well will be 1985 psig. The Director will specify in writing, to the permittee, any increase or decrease to the injection pressure based upon the test results and/or other parameters reflecting actual injection operations, pursuant to Part II, Section C. 5. of the original permit.

- (3) The plugging and abandonment plan and schematic, submitted by your office, has been reviewed, and approved.
- (4) **Financial Responsibility Demonstration:** the applicant has chosen to demonstrate financial responsibility through a Surety Performance Bond in the amount of \$15,000 per well, as submitted by Bond Rider NO. 13.

Prior to commencing injection into this well, permittee must fulfill permit condition Part II, C. 2. and have submitted to the EPA, for review and approval, the following:

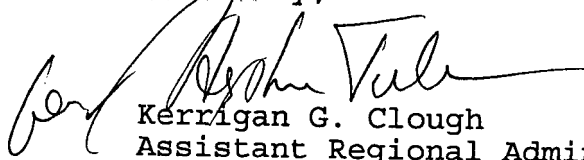
- (1) All conversion is complete and the permittee has submitted a completed Well Rework Record (EPA Form 7520-12).
- (2) The pore pressure has been determined.
- (3) The well has successfully completed and passed a mechanical integrity test, with pressure chart; and

Please be aware that Petroglyph will not have authorization to begin injection into the Ute Tribal #19-07 until the items listed above have been approved by the EPA and Petroglyph has received written authorization to begin injection from the EPA

All other provisions and conditions of the permit remain as originally issued July 12, 1994, and modified April 30, 1998.

If you have any questions, please contact Mr. Chuck Williams at 303-312-6625. Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing MAIL CODE 8P-W-GW. Thank you for your continued cooperation.

Sincerely,



Kerrigan G. Clough
Assistant Regional Administrator
Office of Partnerships and
Regulatory Assistance

cc: Mr. Ronald Wopsock, Chairman
Ute Indian Tribe

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka
BLM - Vernal District Office

Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

Mechanical Integrity Test Casing/Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program, UIC Implementation Section,
999 18th Street, Suite 500, Denver, CO 80202-2466

EPA Witness: _____ Date ____/____/9____ Time _____ am/pm

Test conducted by: _____

Others present: _____

Well name _____	EPA Number _____
Field name _____	
Location _____ qtr qtr; _____ Section; _____ Township; _____ Range	
Owner/Operator _____	

Time	Test #1	Test #2	Test #3
0 min	_____ psig	_____ psig	_____ psig
5	_____	_____	_____
10	_____	_____	_____
15	_____	_____	_____
20	_____	_____	_____
25	_____	_____	_____
30 min	_____	_____	_____
35	_____	_____	_____
40	_____	_____	_____
45	_____	_____	_____
50	_____	_____	_____
55	_____	_____	_____
60 min	_____	_____	_____

Tubing press _____ psig _____ psig _____ psig

Result (circle) Pass Fail Pass Fail Pass Fail

Signature of Witness: _____

Is your RETURN ADDRESS completed on the reverse side?

- SENDER:** 3/9/99 CW 3475C MAR 9 1999
- Complete items 1 and/or 2 for additional services.
 - Complete items 3, 4a, and 4b.
 - Print your name and address on the reverse of this form so that we can return this card to you.
 - Attach this form to the front of the mailpiece, or on the back if space does not permit.
 - Write "Return Receipt Requested" on the mailpiece below the article number.
 - The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Ms. Deanna Bell
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

4a. Article Number

P 380 306 140

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

3/11/99

8. Addressee's Address (Only if requested and fee is paid)

(26) MAR 17 1999

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)

X Deanna Bell

PS Form 3811, December 1994

102595-97-B-0179

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 380 306 140

3/9/99 CW 3475C

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to

Ms. Deanna Bell

Operations Coordinator

Petroglyph Operating Company, Inc.

P.O. Box 607

Roosevelt, UT 84066

Postage

Certified Fee

Special Delivery Fee

Restricted Delivery Fee

Return Receipt Showing to Whom & Date Delivered

Return Receipt Showing to Whom, Date, & Addressee's Address

TOTAL Postage & Fees

\$

Postmark or Date

PS Form 3800, April 1995